

SECTION 128
CONCRETE CYLINDER PIPE

128.1 GENERAL

These specifications cover concrete cylinder pipe intended for use in water supply lines and distribution systems that carry water under pressure. Concrete cylinder pipe may be furnished in pipe diameters of 16 inches and larger for design pressure to a maximum of 400 psi. Unless otherwise shown on the drawings or specified in the Supplementary Specifications, concrete cylinder pipe shall be designed and manufactured for an internal working pressure of 150 psi with allowance for transient pressure in the amount of 50 percent of the indicated working pressure.

128.2 REFERENCES

128.2.1 American Water Works Association
(Latest Edition) (AWWA)

- C 207 Steel Pipe Flanges for Waterworks
Service Sizes 4 in. through 144 in.
- C 208 Dimensions for Fabricated Steel
Water Pipe Fittings
- C 303 Reinforced Concrete Pressure Pipe,
Steel-Cylinder Type, Pretensioned,
for Water and Other Liquids

128.3 DESIGN

128.3.1 The calculation of the cross-sectional area of steel shall be based upon the design procedure stated in AWWA C 303, Appendix A. The design data used in the design of the pipe shall be as stated in the Supplemental Technical Specification or as shown on the plans. The design data shall include but not limited to normal operating pressure, surge pressure, external loading, bedding required, backfilling requirements, estimated weight of the soil to be used for backfilling, modulus of soil reaction, etc. Design calculations shall be submitted for approval prior to fabrication of pipe and fittings.

128.3.2 Use of welded wire fabric in the exterior coating shall conform to the manufacturer's standards; however, use of fabric shall not be included in the total steel area calculations.

128.4 MANUFACTURED PIPE AND FITTINGS

128.4.1 Pipe and fittings shall be manufactured in conformance with AWWA C 303 and shall be manufactured with minimum steel thickness as required in approved design calculations.

128.4.2 JOINTS:

128.4.2.1 Joints shall be flanged where

shown on the drawings or as specified herein with steel flanges as specified herein. Unspecified joints shall be of the rubber gasket type using a bell and spigot design, and shall be in conformance with AWWA C 303.

128.4.2.2 Bells and spigots shall conform to the requirements of AWWA C 303 with the following additions: The spigot ring shall be similar and equal to Carnegie Shape M 3516. Bell and spigot rings shall be designed using their respective internal diameters, with resulting thickness extending a minimum of one inch beyond the limits in the area of the connection between the bell or spigot and the regular cylinder.

128.4.3 Flange connections shall be used at junctures to valves or as may be required on the construction plans. Flanges shall conform to AWWA C 207, Class D.

128.4.4 Specials and Fittings. The ends of pipe or fittings for side street stubouts or at juncture of valves will be flanged, with flanges conforming to the requirements of AWWA Specification C 207 designed for a minimum operating pressure of connections to 150 psi.

128.5 DESIGN OF FITTINGS:

The design of tees, wyes, elbows, and bends using crotch plates shall be manufactured in accordance with design criteria established by Ameron Pipe Company and the paper on "Design of Wye Branches for Steel Pipe" by Swanson, Chaption, Wilkinson, King, and Welson and published in June, 1955 issue of "Journal of the American Water Works Association."

128.6 MEASUREMENT AND PAYMENT

The measurement and payment will be as specified in Section 801.